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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/589,588	06/08/2000	Akira Kitamura	1197-00	1857

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EXAMINER
DANG, THUAN D

ART UNIT	PAPER NUMBER
1764	

DATE MAILED: 08/26/2003

18

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/589,588	KITAMURA ET AL.	
	Examiner	Art Unit	
	Thuan D. Dang	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 June 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1, 3, 5, 6 and 10-16* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,5,6 and 10-16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1, 3, 5, 6, 10-16 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 1, there is no support for the limitations "from 5 to 80% by weight of" which is referred to benzene and other aromatic hydrocarbons, "more than 10% by weight" which is referred to the non-aromatic compound content, and "to convert at least a portion".

Regarding claim 3, "reducing benzene content and C9 content to increase the contents of xylene and toluene in the product" has no support from the specification.

Regarding claim 10, the word "refining" clearly has no support from the specification since the claimed process is a chemical process. Refining is chemical industry is a chemical process. This term carries a chemical meaning. If so, a refining reaction step has no support from the specification.

Claims 11-16 totally lack a support from the specification (see the specification for details).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 3, 14, and 15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 3 depends on a canceled claim.

Claim 14 and 15 are so confusing and inconsistent with claim 1 since claim 1 recites a starting material having more than 10% by weight of non-aromatic hydrocarbons in the starting material.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 3, 5, 6, and 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over King et al (5,952,535) alternatively in consideration with the admitted art disclosed in the specification of this application.

King discloses a process of transalkylation (selected species) comprising contacting a starting material containing C9+ aromatics and benzene and a very minor amount of non-aromatic compounds, namely 0.74 (**mole** %) (not including benzene) in the presence of hydrogen and a catalyst containing MOR and 0.25 wt% of a metal such as Re to convert benzene and other aromatics to a product containing C_{7-8} aromatics (the abstract; col. 3, lines 7-30; col. 4, lines 25-49; col. 8, lines 20-35).

The examiner notes that while applicants claim that the content of non-aromatics in the feed is less than 1 % by **weight**, King discloses using a feed a very minor amount of non-aromatic compounds, namely 0.74 % by **mole** (not including benzene) (see the entire patent for details).

The examiner cannot decide if 0.74 % by mole of non-aromatic is less than 1% by weight in the King feed or not. However, the examiner believes that if this weight amount were greater than 1 %, it would be very close to it.

Assuming arguendo that 0.74 % by mole of non-aromatics in the King feed were greater than 1 wt% in the King feed based on weight, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the King process by using a feed containing less than 1 wt% of non-aromatics or removing this minor amount to less than 1 wt% to arrive at the applicants' claimed process since it has been established by the patent law that if range of prior art and claimed range do not overlap, obviousness may still exist if the ranges are close enough that one would not expect a difference in properties. *In re Woodruff* 16 USPQ 2d 1934 (Fed. Cir. 1990); *Titanium Metals Corp. V. Banner* 227 USPQ 773 (Fed. Cir. 1985); In re *Allers*, 105 USPQ 233 (CCPA 1955).

As discussed above, the transalkylation feedstock of King requires only a minor amount of non-aromatics and one having ordinary skill in the art has recognized that the benzene fraction extracted from gasoline contains a large amount of non-aromatics (the paragraph bridging pages 2 and 3 of the specification of this application).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the King process by employing the benzene fraction derived from gasoline in the place of the benzene feed in the King process since it is expected that using of any benzene for the transalkylation with other higher aromatics in the King process yields similar results.

It would have been obvious to one having ordinary skill in the art at the time the invention was made by further modified the King process by removing any non-aromatics from the mixture of benzene and the C9 aromatics by any separation method such as distillation as discussed above to arrive at the applicants' claimed process since the transalkylation feed of King requires only a minor amount of non-aromatics.

Regarding claim 11, King appears to disclose a feed containing a low concentration of xylene.

Regarding claim 12, the temperature and pressure can be found on column 9, lines 10-35.

The ratio of hydrogen and the hydrocarbons can be found on column 9, lines 27-28.

Regarding claims 14 and 15, a review of 112 rejection is necessary.

Response to Arguments

Applicant's arguments filed 6/18/03 have been fully considered but they are not persuasive.

The argument that the support for amendment of claim 1 can be found on page 11, last line and page 15, line 1 is not correct (review it).

The argument that in applicants' invention, the starting material should preliminarily treated by removing non-aromatics from the crude material is not taught by King is not persuasive since King process clearly uses a feed containing less than 1% wt of non-aromatics. Therefore, once a feed containing more than a permissible content of these impurities, it must obviously be removed so that it can be used for the King's process.

The table on page 8 is noted by the examiner. However, as discussed above, a King's feed is the pretreated feed of the claimed process. A discovery of using a feed containing less than the claimed amount of non-aromatics is known-used by King.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuan D. Dang whose telephone number is 703-305-2658. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 703-308-6824. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Thuan D. Dang
Primary Examiner
Art Unit 1764

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August 25, 2003